
ATTACHMENT 2
Economic Analysis in the Rulemaking Process

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I. Various statutes and other new mandates require agencies to conduct economic analyses of environmental regulations. These analyses must consider a wide range of economic and social issues that are potentially affected by environmental regulations. Mandates requiring the economic analyses of regulatory policies include:

- ▶ **Executive Order 12866, “Regulatory Planning and Review”** requires analysis of benefits and costs for all significant regulatory actions. E.O. 12866 requires a statement of the need for the proposed action, examination of alternative approaches, and analysis of social benefits and costs. E.O. 12866 also states that the distributional and equity effects of a rule should be considered, including distribution by income group, race, sex and industrial sector. Where thought to be important, these effects should be quantified to the extent possible.
- ▶ **The Unfunded Mandates Reform Act of 1995 (PL 104-4)** directs agencies to assess the effects of Federal regulatory actions on State, local and tribal governments, and the private sector, and to obtain meaningful input from State, local and tribal governments for rules containing “significant Federal intergovernmental mandates.” These are Federal mandates which may result in the expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year.
- ▶ **The Regulatory Flexibility Act of 1980 (RFA)** requires that Federal agencies conduct a screening analysis to determine whether a regulation will have a significant impact on a substantial number of small entities, including small businesses, governments and organizations. If the screening analysis finds that a regulation will have such an impact, agencies must prepare a regulatory flexibility analysis, and comply with a number of procedural requirements to solicit and consider flexible regulatory options that minimize adverse economic impacts on small entities.
- ▶ **The Small Business Regulatory Enforcement Fairness Act of 1996 (PL 96-354) (SBREFA)** strengthened the analytical and procedural requirements of the Regulatory Flexibility Act. EPA has prepared Interim Guidance on complying with the RFA and SBREFA requirements. In addition, the Small Business Administration has issued guidance on compliance with the RFA.
- ▶ **Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”** requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations. E.O. 12898 also requires equal consideration for Native American programs. There is an interagency task force working on these issues.

II. EPA policy makers have also increased their requirements for analysis of the effects of environmental regulations. Policy makers need information on the benefits, costs, and other effects of alternative regulatory options in order to make sound decisions.

Economic analyses play an important role throughout the policy development process. Economists play an early role in the development of regulations and participate in an interactive process with policy makers. Preliminary evaluation of potential options requires information on costs, economic impacts, benefits, and equity. Regulatory impact analyses contain the following information:

1. *Industry Profile*

An industry profile compiles information on an industry that (1) supports definition of the baseline, (2) supports judgments about what impacts are likely to be important, and (3) provides the data needed to predict compliance responses and characterize impacts. Specifically, the profile should:

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- A. Provide a description of the regulated industry, including the numbers and sizes of participants, their products, historical trends in production, sales, costs and profitability, and where possible, projections of future market conditions.
 - B. Present an analysis of baseline economic, financial, and environmental conditions. An economic analysis of a policy or regulation compares “the world with the policy or regulation” with “the world without the policy or regulation” (baseline). The impact of the regulation is the difference between these two situations.
 - C. Describe organizational and behavioral characteristics of affected and related firms that influence the likely response of affected facilities to regulatory options.
 - D. Identify and differentiate significant subcategories within the industry, based on size (e.g., small versus large entities), differences in baseline and post-compliance financial conditions, and differences in the expected costs of compliance.
 - E. Discuss the relationship between affected facilities and linked industries, communities, and foreign competition.

2. ***Industry Costs of the Regulation***

EPA regulations typically require industry to reduce the level of some environmental harm. In the case of the Section 316(b) regulation, the harm is defined as adverse environmental impact from impingement and entrainment. The costs of these regulations may include direct expenditures on control technologies, operating and maintenance requirements, and process changes needed to achieve the reduction. In the case of the Section 316(b) regulation, an additional direct cost may be expenditures for Section 316(b) demonstration studies. In addition to these direct expenditures, EPA takes into account indirect costs on the regulated industry such as effects of compliance costs on the price of the industry's products and on the markets in which the products are bought and sold.

3. ***Social Costs of the Regulation***

The analysis of social costs focuses on the impact of regulations on U.S. welfare. The analysis is net of social transfers. Monetary sums that measure changes in individual welfare are all weighted equally regardless of the identities of the parties affected. Social costs of a regulation include the costs Federal, state, and local governments incur when they administer and enforce new regulations. Transitional costs associated with involuntary unemployment are usually included when they pose significant social costs. Lost wages and job search costs during the time laid-off workers are unemployed can be used as a proxy for transitional social cost.

4. ***Economic and Financial Impacts of the Regulation***

This part of the regulatory impact analysis identifies and assesses the economic and financial impacts of the regulation on the following groups:

A. *Impacts on the Regulated Industry*

i. Impacts on Profitability

Information required includes financial data such as sales/revenues, earnings, and balance sheet data. The analysis of profitability determines how the added costs of compliance will affect the financial strength of the firm.

ii. Impacts on Prices (where possible)

A rule that imposes large costs on the manufacture of important production inputs could contribute to general price inflation. A rule without significant price impacts at the macro level may still impose a burden on selected industries or customers.

iii. Impacts on the Industry's Competitive Position

Changes in competitive conditions in an industry may affect the industry's market position, as well as its growth, price performance, and innovative efforts.

B. *Employment Losses and Community Impacts*

Where plant or production line closures are predicted, or where a market analysis predicts a reduction in output, employment losses will result. If significant, these losses can affect the communities in which they occur.

C. *Regional Impacts*

Some rules may have disproportionate impacts on specific regions and local economies. Once costs, compliance responses, and employment impacts have been calculated, the results can be shown by region to assess the potential for regional impacts.

D. *Impacts on Governments and Non-Profits*

The analysis of governments and non-profits addresses the "affordability" of incremental costs. The significance of cost increases can be assessed by comparing costs with tax receipts, median household income, tax assessment ratios, general fund balances, current debt ratings, and other measures of financial condition for state, municipal, local and tribal governments. Government impacts include both direct compliance costs and costs of administering programs.

E. *Impacts on Small Entities*

The small entity analysis is an extension of the economic analysis on industry, governments and non-profits. The analysis determines which facilities belong to small firms, which governments or non-profits are small, calculates impacts for those entities as a group, and then applies the criteria described in the *SBREFA Interim Guidelines* to support a determination as to whether the rule will or will not impose "a significant impact on a substantial number of small entities."

F. *Impacts on Sub-Populations*

This analysis examines equity and distributional impacts of the rule. In specific, an equity analysis determines the distribution of net costs and net benefits that accrue to specific sub-populations. Generally, cost and benefits occur to subcategories of four populations: individuals, businesses, governments, and not-for-profit organizations. The Agency must perform an equity analysis if a rule is expected to have a "disproportionate, substantial, and significant impact on specific sub-populations."

5. ***Benefits of the Regulation***

The benefits of a regulation are defined as the difference in environmental attributes between the world with the policy or regulation and the baseline. Benefits of the Section 316(b) regulation include reduced damages to natural resources and increased benefits to commercial, recreational, and subsistence fishermen. Benefits are estimated in various ways, including:

A. *Assessing the ecological benefits of changes in the value of "services" provided by the affected natural resources.*

For example, a healthy eco-system provides high quality fish spawning habitat, food, and cover for various aquatic species. This can include an analysis of individual species, communities, eco-systems, biodiversity, and endangered species.

B. *Assessing the benefits of changes in the value of the "services" to humans provided by the affected natural resources.*

For example, the presence of an aquatic species may provide recreational and commercial fishing opportunities. Market supply and demand analysis can be used to assess effects on commercial fishing, travel cost models can be used to assess various recreational effects, and contingent valuation can be used to assess indirect nonuse values (e.g., existence value).

6. *Change in Net Social Welfare/Benefits*

Several steps are required in estimating the change in net social welfare or benefits resulting from a regulation. These steps include:

A. *Calculation of Net Social Benefits of Each Regulatory Option*

The net social benefits of each major regulatory option are estimated by subtracting the present value of total compliance costs from the present value of total benefits. The same baseline is used in both the benefit and cost analyses.

B. *Selection of the Best Regulatory Option*

Determining which regulatory option is best, even on the narrow basis of economic efficiency, may be difficult due to data uncertainties, the presence of quantifiable but not monetizable benefits, and benefits that can only be qualitatively assessed.

C. *Role of Net Social Welfare Estimation in the Policy Development Process*

A net social benefits estimate is not sufficient to define the best policies. Economic analysis must be viewed as part of a larger policy development process in which no single factor or finding dominates. The role of the economic benefit/cost analysis is to organize information and comprehensively assess the effects of alternative actions on costs, benefits, equity effects, economic and financial impacts - and the trade-offs among them.